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February 5, 1998

Via HAND DELIVERY

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297

Dear Ms. Salas:

Enclosed for filing are an original and four copies of the Comments and Partial Opposition of Motorola, Inc. to Petitions for Reconsideration in the above-referenced proceeding. Please date stamp and return the extra copy of this submission that is enclosed.

Please do not hesitate to contact us if you have any questions.

Sincerely,

James M. Talens

Counsel for Motorola, Inc.

Enclosures

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of: **Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services**	**CC Docket No. 92-297**

COMMENTS AND PARTIAL OPPOSITION OF MOTOROLA, INC. TO PETITIONS FOR RECONSIDERATION

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February 5, 1998

SUMMARY

In the Ka-Band Service Rules, the Commission adopted well-reasoned policies for sharing between and among Ka-band non-geostationary orbit ("NGSO") fixed-satellite service ("FSS") systems and for use of Ka-band spectrum. The Commission should deny the petitions of Teledesic Corporation ("Teledesic") and Hughes Communications Galaxy, Inc. ("Hughes") to change these policies with respect to: (1) the status of non-homogenous sharing; (2) allocation of sharing burdens; and (3) coordination of international spectrum.

There is a full and adequate record supporting the Commission's policy of permitting non-homogenous sharing, without mandating specific sharing techniques (Part II.A). **First**, the submissions in the Celestri™ Multimedia LEO System licensing proceeding contain detailed analyses demonstrating the viability of non-homogenous sharing using satellite diversity and other interference mitigation techniques. **Second**, ITU conclusions on the viability of non-homogenous sharing between NGSO and geostationary-orbit FSS systems support the viability NGSO/NGSO non-homogenous sharing. **Third**, the pending NGSO FSS Ka-band applications all propose non-homogenous satellite systems.

There are additional reasons for questioning the viability of homogenous NGSO FSS sharing (Part II.B). **First**, homogenous sharing makes it difficult or impossible for operators to change their system designs. **Second**, NGSO FSS applicants should not be constrained by Teledesic's technical specifications. **Third**, the Commission in the Little LEO proceeding recently rejected the implementation of a

single, coordinated satellite constellation that employed the functional equivalent of homogeneous sharing.

The Commission should also adhere to its requirement that "all NGSO FSS licensees . . . bear some portion of the technical and operational constraints necessary to accommodate multiple 'non-homogenous' NGSO FSS systems" (Part III). This rule is consistent with Commission precedent on satellite sharing, particularly in view of the global nature of NGSO FSS services. The authority cited by Teledesic does not support its position to the contrary.

Teledesic is not entitled to any priority over other NGSO FSS applicants with respect to its proposed 288-satellite system (Part IV). That newly-proposed system is so significantly different from Teledesic's licensed 840-satellite system that, under clear Commission precedent, it must be considered a completely new system and included in the current NGSO FSS processing round.

The Commission should also deny Hughes' request for allocation of Ka-band spectrum for international operations, because that spectrum must be allocated through international coordination, pursuant to the policies set out in the Ka-Band Service Rules (Part V).

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of: **Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services**	**CC Docket No. 92-297**

COMMENTS AND PARTIAL OPPOSITION OF MOTOROLA, INC. TO PETITIONS FOR RECONSIDERATION

Motorola, Inc. ("Motorola")[1] hereby comments on and opposes, in part, (a) the Petition for Clarification and/or Reconsideration of Teledesic Corporation ("Teledesic Petition"), and (b) the Petition for Reconsideration or Clarification of Hughes Communications Galaxy, Inc. ("Hughes Petition"), pursuant to Section 1.429(f) of the Rules.[2]

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[1] Motorola has an interest in this proceeding in connection with the activities of three of its subsidiaries: (1) Motorola Global Communications, Inc., which has filed applications for two Fixed Satellite Service ("FSS") systems in the Ka-band -- the Celestri™ Multimedia LEO System (the "Celestri LEO System"), a non-geostationary-orbit ("NGSO") system, and the Celestri GEO System, a geostationary-orbit ("GSO") system; (2) Comm, Inc., which is the licensee of the Millennium System, a Ka-band GSO FSS system; and (3) Space System License, Inc., which is the licensee of the IRIDIUM® System, an NGSO Mobile Satellite Service ("MSS") system that has feeder links in the Ka-band. Celestri™ is a trademark of Motorola, Inc., and IRIDIUM® is a registered trademark of Iridium LLC.

[2] See 47 C.F.R. § 1.429(f). These petitions were noticed in the Federal Register on January 21, 1998. See 63 Fed. Reg. 3114 (Jan. 21, 1998).

I. INTRODUCTION

In establishing rules for sharing between non-geostationary orbit ("NGSO") Fixed Satellite Service ("FSS") systems in this rulemaking proceeding,[3] the Commission stated:

> ITU . . . studies have identified, and the Commission recognizes, two sharing scenarios: (1) sharing between or among "homogenous" NGSO FSS systems, and (2) sharing between or among "non-homogenous" NGSO FSS systems.[4]

At the same time, the Commission indicated that it will maintain flexibility with respect to specific sharing techniques, while requiring all Ka-band NGSO FSS systems to bear an equitable share of the burden of sharing the spectrum:

> [W]e will not now mandate any specific sharing principles or mitigation techniques to be used in coordination between or among non-Government NGSO FSS systems. However, we expect all non-Government NGSO FSS systems to be responsible for some portion of the burden-sharing. Specifically, we expect all NGSO FSS licensees to bear some portion of the technical and operational constraints necessary to accommodate multiple "non-homogenous" NGSO FSS systems.[5]

These principles establish a clear and reasonable basis for sharing the available Ka-band spectrum between and among NGSO FSS systems.

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[3] Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, Third Report and Order, CC Docket No. 92-297 (rel. Oct. 15, 1997) ("Ka-Band Service Rules").

[4] Id. at ¶ 36 (emphasis added).

[5] Id. at ¶ 38.

Despite the clarity of these sharing principles, Teledesic argues that the Commission should "clarify" them in several respects. In fact, what Teledesic requests is not "clarification" at all, but a substantial revision of the Commission's Ka-band NGSO FSS sharing rules.[6] Teledesic wishes to have the Commission: (1) reject non-homogenous sharing; (2) confer preferred status on "homogenous" or "coordinated orbit" sharing; and (3) essentially exempt the Teledesic system from the burden of sharing spectrum with other Ka-band NGSO FSS systems.[7] The Commission must reject these proposals as self-serving and not in the public interest. If Teledesic were to prevail, it would impose insurmountable constraints on the ability of other NGSO FSS applicants to pursue viable sharing options, unnecessarily delay competition among NGSO FSS systems in the Ka-band, and virtually ensure that Teledesic would maintain a monopoly over a valuable spectrum resource.[8]

Hughes requests that the Commission authorize its GSO Spaceway system "to conduct international operations across the full bandwidth at Ka band that is

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[6] The Ka-band spectrum that is at issue with respect to the issues raised by Teledesic is the portion of the Ka-band allocated on a primary basis for NGSO FSS – i.e., the 18.8-19.3 GHz and 28.6-29.1 GHz bands.

[7] See Teledesic Petition at 5-11, 16-24.

[8] Motorola agrees with Teledesic on one point; i.e., that there is no basis for further division of the 18.8-19.3 and 28.6-29.1 GHz bands, in which NGSO FSS is designated as primary in the United States. See Teledesic Petition at 11-15. There is ample evidence that sharing between and among non-homogeneous NGSO FSS Ka-band systems is possible. Under such circumstances, further division of the Ka-band is not necessary. See Ka-Band Service Rules at ¶ 38 (further division of the spectrum is an alternative only "[i]f NGSO FSS non-Government systems are unable to share spectrum").

available for GSO systems on a primary basis."[9] In the Ka-Band Service Rules, the Commission established procedures for international coordination involving U.S. licensed satellite systems.[10] In accordance with these procedures, on a case-by-case basis, Hughes (and any other U.S. Ka-band satellite licensee) can obtain access to spectrum for international operations. Accordingly, Hughes' request in this proceeding for specific authorization to operate internationally on certain frequency bands should be rejected.[11]

II. THE KA-BAND SERVICE RULES PROPERLY REQUIRE SHARING BETWEEN NON-HOMOGENEOUS NGSO FSS SYSTEMS

Teledesic initially argues that the Commission should not "endorse" sharing by Ka-band NGSO FSS systems with non-coordinated (i.e., non-homogenous) orbits.[12] This argument is somewhat ambiguous – because Teledesic does not articulate clearly what it means by "endorse" – but Teledesic's position on Ka-band

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[9] Hughes Petition at 5-6.

[10] Ka Band Service Rules at ¶¶ 66-72.

[11] Hughes also requests that it be made aware of certain private coordination agreements between the United States and other countries regarding Ka-band spectrum use outside of the United States. See Hughes Petition at 3-5. Such agreements typically contain confidential information regarding spectrum utilization and are not made public. See, e.g., Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service, 8 FCC Rcd. 8450, 8453 (1993) ("Little LEO Order") ("the relative benefits of making coordination agreements publicly available are unlikely to outweigh the potential damage to licensees through the release of confidential and proprietary data"); Robert J. Butler, 6 FCC Rcd. 5414 (denial of FOIA request for documents regarding coordination of American Mobile Satellite Corporation system).

[12] Teledesic Petition at 7-9.

sharing is revealed by its statement that "all indications lead to the conclusion that non-coordinated sharing should not be adopted for the NGSO FSS Priority Bands . . . ."[13] In any event, the Commission must reject the Teledesic Petition and not reconsider its policies on non-homogenous sharing.

The Commission, after carefully considering the extensive record before it, decided that non-homogeneous sharing by NGSO FSS systems in the Ka-band is achievable and in the public interest. The evidence supporting the Commission's decision to permit non-homogenous sharing includes the detailed technical submissions in the Celestri LEO System proceeding. Moreover, the Commission has correctly recognized that there are significant problems associated with homogenous sharing.

A. The Commission Must Adhere to its Decision to Permit Ka-Band NGSO FSS Applicants to Share Spectrum on a Non-Homogenous Basis

The Commission's approach to sharing in the Ka-Band Service Rules takes the careful approach of permitting non-homogenous sharing, without "mandat[ing] any specific sharing principles or mitigation techniques."[14] Thus, the Commission did not "endorse" any specific NGSO/NGSO sharing techniques, evidently because it recognized that the complex technical issues associated with choosing the most efficient sharing methods are best resolved by applicants and licensees themselves. The Commission has a full and adequate record on which to base this approach –

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[13] Id. at 9. Teledesic uses the term "non-coordinated orbits" to describe non-homogeneous sharing. See id. at 3 n.3.

[14] Ka-Band Service Rules at ¶ 38.

contrary to the assertion of Teledesic that "[t]he Commission has neither the record nor a rationale for endorsing sharing using non-coordinated orbits at this time."[15]

First, the application for the Celestri LEO System contains detailed sharing analyses demonstrating the viability of non-homogenous sharing using satellite diversity and other interference mitigation techniques.[16] Motorola has recently supplemented these analyses with further sharing studies showing how the Celestri LEO System could share spectrum with the licensed Teledesic network as well as other NGSO FSS systems.[17] While Motorola believes that this record amply demonstrates the viability and efficiency of non-homogenous NGSO FSS sharing in the Ka-band, Motorola will continue to work with the Commission and other concerned companies and governments to address any remaining concerns they may have regarding the use of such interference mitigation techniques.

Second, while Teledesic is technically correct that the CPM-97 Report stated that "[t]he feasibility of frequency sharing between two or more non-homogenous

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[15] Teledesic Petition at 8.

[16] See Application of Motorola Global Communications, Inc. for Authority to Construct, Launch and Operate the Celestri Multimedia LEO System, File No. 79-SAT-P/LA-97(63), Appendix B, at 13-25 (filed June 12, 1997) ("Celestri LEO System Application"); see also Errata and Clarification, from Counsel for Motorola to William Caton, Acting Secretary, Federal Communications Commission (July 29, 1997); Letters from Counsel for Motorola to William Caton, Acting Secretary, Federal Communications Commission (Aug. 8, 1997 & Aug. 22, 1997).

[17] Consolidated Opposition and Reply Comments of Motorola, File Nos. 79-SAT-P/LA-97(63) & 94 through 98-SAT-P/LA-97, Appendix C (filed Feb. 2, 1998) ("Motorola Consolidated Opposition").

NGSO FSS systems has not been investigated" within the ITU,[18] this does not provide any basis for the Commission to disfavor non-homogenous sharing. Significantly, the CPM-97 Report provides substantial detail on mitigation techniques for sharing between NGSO and GSO FSS systems (which is necessarily "non-homogenous" sharing, because GSO orbits cannot coordinate with NGSO orbits).[19] As explained in the Celestri LEO System Application and in the Motorola Consolidated Opposition, the same general mitigation techniques are effective for both NGSO/NGSO and GSO/NGSO FSS Ka-band sharing.[20] The conclusions of the CPM-97 Report regarding these mitigation techniques are instructive:

> Detailed studies of sharing and potential interference between NGSO and GSO FSS networks have produced a list of mitigation techniques that might be used to reduce the frequency and duration of interference. Whilst further study is needed . . .; in general it is considered that satisfactory ways of co-frequency sharing by NGSO FSS and GSO FSS networks can be found where the burden is placed on either the GSO or NGSO network.[21]

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[18] CPM-97 Report, at 156 (May 16, 1997); see Teledesic Petition at 9.

[19] See CPM-97 Report, at 156-59; see also Report of the Meeting of Working Party 4A of Radiocommunication Study Group 4, Geneva, 13-22 January 1997, ITU Doc. 4A/271-E, at 241-332 (Apr. 10, 1997) (providing substantial additional detail on GSO/NGSO sharing and interference mitigation studies).

[20] Celestri LEO System Application at 67-70; Motorola Consolidated Opposition at 8-17, 25-31, Appendix C.

[21] CPM-97 Report at 159. These studies ultimately led to the decisions reached at WRC-97 to adopt a new regulatory regime and provisional power limits to promote sharing between GSO and NGSO FSS systems. See ITU, WRC-97 Final Acts, Resolution 130 [COM 5-18], Use of Non-Geostationary Systems in the Fixed Satellite Service in Certain Frequency Bands ("Resolution 130").

Third, the pending NGSO FSS Ka-band applications of Motorola, Teledesic,[22] Hughes, Lockheed Martin, SkyBridge II, TRW and @Contact Communications all propose non-homogenous satellite systems.[23] Thus, a non-homogenous sharing environment is currently the only one under consideration in the current Ka-band NGSO FSS processing round. Under these circumstances, there is no reasonable basis for the Commission to change its decision in the Ka-Band Service Rules to permit Ka-band NGSO FSS sharing on a non-homogenous basis.

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[22] The substantially redesigned 288-satellite system that Teledesic has proposed is, under clear Commission precedent, a new system design that must be considered in the current NGSO FSS processing round. See Section IV below; Petition to Deny of Motorola, Inc., File No. 195-SAT-ML-97, at 3-18 (filed Nov. 5, 1997) ("Motorola Petition to Deny").

[23] See Celestri LEO System Application (63 low-earth-orbit ("LEO") satellites in 7 planes at 48° inclination); Letter from Mark A. Grannis and Kent D. Bressie to William F. Caton, Secretary, Federal Communications Commission, File No. 195-SAT-ML-97, (Sept. 26, 1997) ("Teledesic Amendment") (288 LEO satellites in 12 planes at 98.2° inclination); Application of Hughes Communications, Inc. for Authority to Launch and Operate an NGSO Global Broadband Satellite System, File No. 44-SAT-P/LA-98(20) (filed Dec. 22, 1997) (20 mid-earth-orbit ("MEO") satellites in 4 planes at 55° inclination); Application of Lockheed Martin Corporation for Authority to Launch and Operate the LM-MEO Satellite Communications System in Non-Geostationary Orbit, File No. 51-SAT-P/LA-98(32) (filed Dec. 19, 1997) (32 MEO satellites in 4 planes at 50° inclination); Application of SkyBridge II L.L.C. for Authority to Launch and Operate the SkyBridge II System, File No. 58-SAT-P/LA 98(96) (filed Dec. 22, 1997) (96 LEO satellites in 16 planes at 55° inclination); Application of TRW Inc. for Authority to Launch and Operate a Global Satellite System Employing Geostationary and Nongeostationary Satellites in the Fixed-Satellite Service, File No. 60-SAT-AMEND-98 (filed Dec. 19, 1997) (15 MEO satellites in 3 planes at 50° inclination); @Contact, LLC Application to Construct, Launch and Operate a Nongeostationary Orbit Fixed Satellite Service in the Ka-Band, File No. 59 SAT-P/LA-98(20) (filed Dec. 22, 1997) (16 MEO satellites in 4 planes at 45° inclination).

B. The Commission Must Reject Teledesic's Request that Homogenous Sharing Be Accorded Preferred Status

Not satisfied with asking the Commission to "clarify" language in the Ka-Band Service Rules regarding non-homogeneous sharing, Teledesic also argues that "[t]he Commission should . . . carefully consider the potential benefits of reserving [the NGSO FSS bands] for systems that are willing to use coordinated orbits."[24] In fact, Teledesic goes so far as to imply that the Commission should not permit "a system [to] refuse[] to coordinate its orbits with those of the already licensed NGSO FSS system" (i.e., the Teledesic system).[25] In other words, Teledesic boldly suggests: (1) that only homogenous sharing should be permitted among Ka-band NGSO FSS systems; and (2) that all such systems should be required to coordinate their orbits with those of the Teledesic system. The Commission must conclusively reject these suggestions as an ill-advised and self-serving attempt to monopolize the portion of the Ka-band allocated on a primary basis for NGSO FSS.

As explained above, there are compelling reasons for the Commission's policies supporting non-homogenous sharing adopted in the Ka-Band Service Rules. In addition, there are significant independent reasons for questioning the viability and effectiveness of homogenous NGSO FSS sharing in the Ka-band.

First, as the Commission has recognized, "sharing between or among 'homogenous' systems imposes similar uniform design constraints on subsequent

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[24] Teledesic Petition at 10.

[25] Id.

NGSO FSS systems implemented in the same frequency bands."[26] Indeed, homogenous sharing would be virtually impossible to implement if operators were permitted to change their system designs significantly, as Teledesic has recently proposed.[27] Subsequent licensees would be held "hostage" by those licensees proposing to change their systems in ways that would not allow for coordinated orbits.

Second, it would be fundamentally unfair to force each NGSO FSS applicant to be constrained by Teledesic's technical specifications – particularly because Teledesic does not have a license for the system it now proposes to build.[28] Such constraints would impair significantly the performance of other Ka-band NGSO FSS systems. In fact, the four NGSO FSS applicants that propose mid-earth-orbit ("MEO") systems could not possibly coordinate with Teledesic's old or new orbits. In any case, if the Commission were to find only homogeneous sharing appropriate, then all potential users of the NGSO FSS Ka-band spectrum – not just Teledesic – would have to be allowed to play an active role in defining the conditions for such sharing.

Third, homogeneous sharing is, in essence, the functional equivalent of a single, coordinated satellite constellation managed by multiple parties – with no opportunity for meaningful innovation by any of the parties acting alone. The Commission recently rejected just such an approach in the second Little LEO

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[26] Ka-Band Service Rules at ¶ 36.

[27] See Motorola Petition to Deny at 8-9; Reply of Motorola, Inc., File No. 195-SAT-ML-97, at 15 (filed Nov. 24, 1997) ("Motorola Reply").

[28] See Section IV below.

processing round. In that proceeding, one party proposed a "Virtual Constellation" involving "licensing all applicants to operate over the entire available spectrum, with each applicant operating a small number of technically compatible satellites."[29] After considering commenters' warnings that such an approach "would result in either outright system failure or a system compromised to the point of marginality" and that "a Virtual Constellation System should be an act of last resort," the Commission found that "to mandate a Virtual Constellation system given the technical constraints of the spectrum available to second processing round applicants would be imprudent."[30] These same policy concerns apply with even greater force to this proceeding, in which a larger number of potential satellites and systems makes homogenous sharing even more complex.

III. THE KA-BAND SERVICE RULES PROPERLY ALLOCATE THE SHARING BURDEN AMONG ALL NGSO FSS SYSTEMS

Teledesic also asks the Commission to change the reasonable allocation of sharing burdens among Ka-band NGSO FSS systems that the Commission adopted in the Ka-Band Service Rules. The Commission made its policy in this area very clear:

> we expect all non-Government NGSO FSS systems to be responsible for some portion of the burden-sharing. Specifically, we expect all NGSO FSS licensees to bear some portion of the technical and operational constraints

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[29] In the Matter of Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service, Report and Order, IB Docket No. 96-260, at ¶ 117 (rel. Oct. 15, 1997).

[30] Id. at ¶ 118.

> necessary to accommodate multiple "non-homogenous" NGSO FSS systems.[31]

Teledesic argues that it is inconsistent with established Commission policy to require that "all NGSO FSS licensees . . . bear some portion of the technical and operational constraints"[32] associated with sharing. However, Teledesic is somewhat unclear in identifying the basis for its criticism of the Commission's burden-sharing policy. On the one hand, Teledesic states that, in general, "licensees should not be forced to *significantly alter* their systems or services to accommodate applicants in a later processing round that takes place years later."[33] On the other hand, Teledesic contends that "[t]he responsibility for avoiding interference rests with the party proposing the new service" – implying that existing licensees bear little or no responsibility to make spectrum sharing work, once it is determined that such sharing is in the public interest.[34]

In fact, the clear approach to sharing adopted in the Ka-Band Service Rules is entirely consistent with the Commission's pro-competitive policies – and particularly so with respect to satellite services. For example, the Commission's Rules for Little LEO systems, which were adopted nearly five years ago, provide:

> All affected applicants, permittees, and licensees shall, at the direction of the Commission, cooperate fully and make

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[31] Ka-Band Service Rules at ¶ 38.

[32] Id.

[33] Teledesic Petition at 16 (emphasis in original).

[34] See id. at 17; see also id. at 16 ("the responsibility for avoiding harmful interference, though shared by all, falls first and foremost on new applicants"); id. at 17 n.28 ("'It is clear that the "newcomer" is responsible, financially and otherwise, for taking whatever steps may be necessary to eliminate objectionable interference.'") (quoting Sudbrink Broadcasting of Georgia, 65 F.C.C.2d 691, 692 (1977)).

> every reasonable effort to resolve technical problems and conflicts that may inhibit effective and efficient use of the radio spectrum . . . .[35]

In adopting this provision, the Commission stated that it "require[s] licensees to coordinate not only with future licensees, but with future applicants as well."[36] Such an approach to sharing spectrum is the only reasonable one to apply to NGSO FSS satellite systems, which are by their nature global systems. By contrast, the rigid approach to sharing that Teledesic would like to impose on its competitors is neither workable nor efficient.

Furthermore, the authorities cited by Teledesic do not support its myopic view of sharing.[37] **First**, Teledesic's strained characterization of the Little LEO proceeding is directly at odds with the clear rules adopted in that proceeding, which are quoted above.[38]

Second, Teledesic completely mischaracterizes the context in which the Commission concluded in the Big LEO proceeding that first-tier licensees "are insulated from any mutual exclusivity that may arise."[39] The Commission simply meant to assure

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[35] 47 C.F.R. § 25.142(b)(3).

[36] Little LEO Order at 8452-53 (emphasis added).

[37] The cases cited by Teledesic that apply rigid sharing rules to applicants for individual terrestrial radio broadcast licenses, see Teledesic Petition at 17 n.28, are plainly inapplicable to the context of global NGSO satellite services.

[38] See Teledesic Petition at 20.

[39] See Teledesic Petition at 19 n.33; Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Band, 11 FCC Rcd. 12861, 12874 (1996) ("Big LEO Reconsideration Order").

existing licensees that they would not lose their licenses if other applicants later demonstrated that they too were financially qualified. Those first-tier licensees were not insulated from sharing their licensed spectrum. In fact, the Commission found that up to four CDMA licensees (both first- and second-tier) would have to share spectrum with the sole TDMA licensee.[40]

Similarly, the requirement that Big LEO applicants demonstrate that their "operations will not cause unacceptable interference to other authorized users of the spectrum"[41] is entirely consistent with the approach to sharing in the Ka-Band Service Rules. The very purpose of requiring that applicants provide sharing information, such as the detailed technical data provided in the Celestri LEO System application, is to ensure that co-frequency sharing "will not cause unacceptable interference to other authorized users of the spectrum."[42]

Third, Teledesic's reliance upon the DISCO-II Order[43] is entirely misplaced. In that proceeding, the Commission indicated that it may, in certain cases, condition or deny an application filed outside of a processing round by a foreign-licensed system, where granting the application "would require U.S.-licensed systems to

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[40] See id. at 12872-73.

[41] 47 C.F.R. § 25.143(b)(iv); see Teledesic Petition at 19 & n.32.

[42] 47 C.F.R. § 25.143(b)(iv).

[43] Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, IB Docket No. 96-111 (rel. Nov. 26, 1997) ("DISCO-II Order").

significantly alter their operations."[44] Thus, this policy only applies where (1) the applicant has failed to participate in a processing round and (2) a U.S. licensee would be required to "significantly alter" its operations in order for the foreign applicant to enter the U.S. market. Moreover, the Commission noted that conditioning or denying a foreign application even under such circumstances would be the exception:

> We believe that, in the majority of cases, non-U.S. satellites meeting Commission technical requirements will be able to be coordinated to operate compatibly with U.S.-licensed systems.[45]

Lastly, Teledesic's argument that the Ka-Band Service Rules would somehow violate U.S. obligations under the General Agreement on Trade in Services ("GATS") plainly lacks substance.[46] Teledesic states:

> [I]f the Commission were to force a U.S. licensee to "significantly alter" its operations to accommodate a *U.S. applicant*, it would be according more favorable treatment to U.S. *applicants* than to applicants from foreign countries.[47]

The problem with this argument (aside from the fact that the Commission has not said that it will require U.S. licensees to "significantly alter" operations to accommodate subsequent applicants) is that it is based on a faulty premise. Specifically, Teledesic does not point to any support (nor could it) for its assumption that U.S. and foreign applicants would be subject to different sharing rules. Rather, the Ka-Band Service

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[44] Id. at ¶ 150.

[45] Id.

[46] See Teledesic Petition at 21.

[47] Id. (emphasis in original).

Rules – read together with the policies adopted in the DISCO-II Order – provide identical treatment to U.S. and foreign applicants, and are therefore fully consistent with U.S. obligations of national treatment under the GATS.[48]

IV. TELEDESIC IS NOT ENTITLED TO ANY LICENSING OR SHARING PRIORITY OVER OTHER KA-BAND NGSO FSS APPLICANTS

Teledesic asserts that it is entitled to some licensing and/or sharing priority over the other Ka-band NGSO FSS applicants, by virtue of the license which the Commission granted to it for the 840-satellite system that Teledesic initially proposed but has now decided not to build.[49] While the Commission should adhere to the generally-applicable sharing rules adopted in the Ka-Band Service Rules regardless of the disposition of Teledesic's modification application, it is nevertheless important to note that Teledesic's proposed 288-satellite system is not entitled to any priority over other NGSO FSS applicants.

The system modifications proposed by Teledesic effectively amount to a complete redesign of its licensed system. Among other things, Teledesic has proposed a reduction in the number of satellites in its system from 840 to 288, a significant

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[48] See General Agreement on Trade in Services, April 15, 1994, Art. XVII; see also Communication from the United States, WTO Doc. S/GBT/W/1/Add.2/Rev.1 (Feb. 12, 1997) (U.S. GATS schedule covering obligations of national treatment with respect to basic telecommunications services). For example, SkyBridge (a foreign-owned applicant) is an equal participant in the current Ka-band NGSO processing round.

[49] Teledesic Corporation, 12 FCC Rcd. 3154 (1997); see Teledesic Petition at 10 (suggesting that an applicant should not be permitted to "refuse[] to coordinate its orbits with those of the already-licensed NGSO FSS system), 23 ("Teledesic has relied on its license . . . . This has been possible only because of the widespread belief that an FCC license confers 'clear and unambiguous authority' . . . .").

increase in uplink power, and substantially different orbital inclinations and altitudes.[50] The system now proposed by Teledesic is so significantly different from Teledesic's licensed system that it must be considered a completely new system design, and thereby processed with the applications in the current NGSO FSS processing round.[51] This approach is compelled by established Commission policy, articulated most clearly in Geostar Positioning Corporation:[52]

> [T]he modified system is so significantly different from the system as authorized that it must be considered as a new system and should not become the new "baseline" for coordination without the benefit of a new . . . processing round.[53]

The Commission can only properly consider the complicated sharing issues presented by Teledesic's modification application in connection with the other applications filed in the current processing round.

V. HUGHES MUST COORDINATE ITS SPECTRUM USE OUTSIDE OF THE UNITED STATES PURSUANT TO THE COMMISSION'S BAND PLAN

Hughes seeks authority "to conduct international operations across the full bandwidth at Ka band that is available for GSO FSS systems on a primary basis."[54]

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[50] See Teledesic Amendment.

[51] See Motorola Petition to Deny at 3-18; Motorola Reply at 3-8.

[52] 6 FCC Rcd. 2276 (1991).

[53] Id. at 2278.

[54] Hughes Petition at 7.

Hughes asserts that the Ka-Band Services Rules should have addressed the international spectrum needs of the Spaceway system.[55] Specifically, Hughes states that when the Commission licensed the Spaceway system,[56] it "indicated that issues related to [Hughes'] requested frequencies for international operations would be deferred and addressed in the [Ka Band Services Rules]".[57]

Hughes overstates the significance of the Commission's statements in its licensing order. The Commission, in fact, stated:

> We authorize Hughes to provide services to, from, or within the United States. With respect to Hughes's requested frequencies for international operations, the coordination issues concerning commercial U.S.-licensed 28 GHz satellite systems will be discussed in the 28 GHz Band Satellite Services Rules.[58]

As it said it would, the Commission discussed the international coordination of spectrum for Ka-band satellite systems in the Ka-Band Service Rules. The Commission stated that it would use its band plan "as the basis for coordinating U.S. licensed 28 GHz band satellite systems internationally."[59] The Commission "outline[d] the procedures [it] intend[s] to follow for coordinating U.S.-licensed non-Government satellite systems with each other in other parts of the world."[60] It is only

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[55] See id. at 5-6.

[56] See Hughes Communications Galaxy, Inc., DA 97-971 (Int'l Bureau May 9, 1997).

[57] Hughes Petition at 6.

[58] Hughes Communications Galaxy at ¶ 18 n.14.

[59] Ka-Band Service Rules at ¶ 66.

[60] Id.; see also id. ¶¶ 67-72.

through international coordination pursuant to these procedures that Hughes (and other Ka-band systems) will be authorized to use spectrum for international operations. Accordingly, it is inappropriate for the Commission in this proceeding to grant, or otherwise specifically to address, Hughes' request for authorization to use Ka-band spectrum for the international operations of the Spaceway system.[61]

VI. CONCLUSION

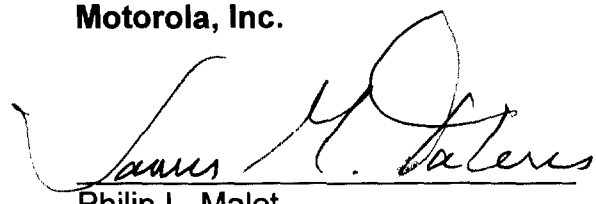
For the foregoing reasons, the Commission should deny Teledesic's and Hughes' Petitions for Reconsideration, to the extent they seek to change the well-reasoned policies adopted in the Ka-Band Service Rules regarding: (1) non-homogenous sharing between and among Ka-band NGSO FSS systems; (2) allocation

[61] When Hughes ultimately obtains authority to use spectrum for the international operations of the Spaceway system, such use will be subject to applicable rules on use of spectrum, including (1) the decision at WRC-97 that only GSO FSS systems notified before November 18, 1995 may operate in the 18.8-19.3/28.6-29.1 GHz portions of the Ka-band, see ITU RR S5.523A (WRC-97); and (2) the requirement that GSO FSS systems share with NGSO FSS systems that comply with the provisional APFD and EPFD limits established at WRC-97 (and which will be finalized at WRC-1999/2000), see Resolution 130. As explained in the Motorola Consolidated Opposition, these APFD and EPFD limits now provide the relevant standard for "harmful interference" with respect to secondary status under the Commission's Rules. See Motorola Consolidated Opposition at 10 n.13.

of sharing burdens among Ka-band NGSO FSS systems; and (3) coordination of international spectrum for all Ka-band FSS systems.

Respectfully submitted,

Motorola, Inc.



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February 5, 1998